

Alp Sayin

Antalya, Turkey

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Radar Engineer with Embedded Systems expertise with 2 years of postdoc and 8 years of R&D Experience

Currently, I'm a radar engineer with an interest in MIMO and Synthetic Aperture radars with signal processing focus. I am also an expert in embedded systems in which I have extensive practice in designing and delivering hardware and software all together. Apart from my work I'm passionate about skydiving, swimming and skiing.

Education

- **PhD.** Microwave Integrated Systems Laboratory, EESE, University of Birmingham, UK 10/2013 – 9/2017
- **MSc.** System-on-Chip Design, Royal Institute of Technology, Stockholm, SWEDEN 8/2010 - 5/2013
- **BSc.** Honours Electrical and Electronics Engineering, Bilkent University, Ankara, TURKEY 8/2006 - 6/2010
- Middle East Technical University Development Foundation Private High School, Ankara, TURKEY 8/2003 - 6/2006

Work Experience

Research Fellow, Microwave Integrated Systems Laboratory (MISL) 9/2016-12/2018
Development of radar systems, hardware design & implementation, signal processing algorithm development, modelling & simulation, planning & conducting trials, data processing, documentation & presentation of results to stakeholders, project planning & managing, and managing students

System Engineer/Founder, Nocta Technologies 6/2012 - 9/2013
System design, project management, task distribution, firmware development, client software implementation, running simulations, testing, documentation and presentation of progress to stakeholders, general research & development activities. Company was awarded a grant by Turkish Ministry of Science, Industry & Technology.

Embedded Software Developer, Inturlam Bilisim 6/2011 - 9/2011
System design, project management, embedded software development, low-level comms protocol development & implementation, PC software design & development, testing & verification, working with the hardware group

Projects

PASSAT II - Passive micro-satellite based Spaceborne Synthetic Aperture Radar (SAR) 9/2017 - 9/2018
Persistent large area monitoring. Affordable Space-Based Capability, Centre for Defence Enterprise

SPYGLASS - Galileo-based passive Radar System for Maritime Surveillance 7/2017-11/2017
Horizon 2020, European GNSS Agency

SIMITAR II - Persistent surveillance from air with a low frequency MIMO towed array radar 9/2016 - 6/2017
Persistent surveillance from the air, Centre for Defence Enterprise

MIMO Sensor Array Optimisation for Short-Range High-Resolution Automotive Sensing 10/2013 - 6/2016
PhD Funded by Jaguar Land Rover

Centralised Swarm AI system for MavLink enabled Unmanned Vehicles 6/2012 - 9/2013
Nocta Technologies, Turkish Ministry of Science, Industry & Technology

VHF/UHF Uplink Solutions for Remote Wireless Sensor Networks 2/2012-12/2012
Implementation of Internet Protocol over a ad-hoc software defined radio link with use of amateur radio bands to transfer data from a remote wireless sensor network to a repository, KTH Sweden

Porting of TinyOS to Atmega128Rfa1 9/2011-1/2012
Porting of TinyOS to and implementation of a simple wireless sensor network application on Atmega128Rfa1 with implementation of a gateway program running on Linux, KTH Sweden

Remote Pipe Observation System 6/2011 - 9/2011
implementation of a pipe observation system, which includes monitoring and presentation of flow, pressure and temperature data of liquids within, Inturlam Bilisim, TOBB University

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Publications

- Passive radar using Starlink transmissions: A theoretical study 12/2018
Submitted to DGON IRS 2019
- PASSAT: Passive Bi-Static Radar Imaging Constellation – Airborne Trials and In-Orbit Demonstrator Design 10/2018
<https://epubs.surrey.ac.uk/849671>
- Passive SAR Satellite System (PASSAT): airborne demonstrator and first results 10/2018
<https://digital-library.theiet.org/content/journals/10.1049/iet-rsn.2018.5225>
- Passive SAR Satellite System (PASSAT): Ground Trials 08/2018
https://radar2018.org/abstracts/pdf/abstract_119.pdf
- MIMO Array for Short-Range, High-Resolution Automotive Sensing 07/2018
<https://ieeexplore.ieee.org/document/8468322>
- MIMO Radar Concept with a Towed Antenna Array 10/2016
<https://ieeexplore.ieee.org/document/8367536>
- VHF/UHF Uplink Solutions for Remote Wireless Sensor Networks, MSc. Thesis 05/2013
<http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-123514>

Teaching Experience

- TA for “Communication Systems”, “Computer Systems”, “Computing Systems & C Programming”, “Computer Networking”, “Circuits, Devices & Fields” modules, University of Birmingham 1/2014 - 6/2018
- Team Coach for Communications System Design 2012 Fall Project, KTH Royal Institute of Technology 8/2012 - 1/2013
- Java, Matlab and Assembly TA and private tutor for CS101, CS102 and EEE212 at Bilkent University 8/2008 - 6/2010

Technical Experience

- Remote Sensing: MIMO Radar, Phased Array, Digital Beamforming, SAR, MTI, Doppler, Passive Bistatic, Airborne and Spaceborne, Sonar, Ultrasonic Sensing, Signal Processing, RF front-end, Automotive, Surveillance, Defence
- Embedded Systems: Hardware design, PCB design, Embedded hardware, Embedded software, Multi-core programming, FPGA programming, Low-level communications (RS232, I2C, Ethernet etc.), Wireless Sensor Networks, Network Applications, Client/Server programming, IoT (Internet of Things), FreeRTOS, uC/OS, TinyOS, Contiki-OS
- Other: System Design, Algorithm Development, Heuristics, Software Optimisation, Software Development, Project Planning and Management, Knowledge Transfer, Risk Assessment, Time Management
- Languages: MATLAB, Python, C/C++, Java, VHDL, Bash, Unix, Assembly, HTML, CSS, Javascript
- Environments: MATLAB, NI LabView, Eclipse, Quartus, Xilinx ISE, Modelsim, Gpl-Eda, Netbeans, Proteus, Git, Linux

Other

- Committee Member and Advisor for University of Birmingham Skydiving Society 10/2016 – Current
- Trained with the University of Birmingham Triathlon Team 9/2016 – 9/2018
- Founding member and Secretary of University of Birmingham Drone Society 6/2016 – 8/2017
- Languages: Turkish (Native), English (C2)
- LinkedIn: <https://www.linkedin.com/in/alpsayin>